User Manual
SuperCycler
Trinity

Revision 1.0

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Kyratec.

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1. Foreword

Congratulations on purchasing a Kyratec SuperCycler Trinity. You are now one of the growing number of highly skilled customers worldwide to adopt the SuperCycler Trinity as their preferred Thermal cycling Engine.

Our philosophy has been to generate the user friendly yet powerful cycling workhorse. We trust you will be most pleased with our product however always welcome any suggestions you may have to make our products better for the future. Feel free to email us: support@kyratec.com.

2. Features

2.1 General

The SuperCycler Trinity is a high performance block cycling system configured and optimised for Industry standard 200ul individual or strip tubes (domed or flat-capped) or 96-well plates (low or high skirt) with strip caps or adhesive film seals. It incorporates state of the art electronics, precision quality Ferrotec™ peltier devices and a flexible user interface accessed via a vivid touchscreen display.

2.2 Configuration

The SuperCycler Trinity utilises six Peltier devices to actively heat and cool the block between 4°C and 99°C. These are arranged into three zones with independent sensing and control capabilities.

2.3 Triple Zone

The unique Trinity Triple Zone block format allows you to not only optimize your reactions but to also run multiple differently thermal optimised reactions in a single run at exactly defined temperatures. Whilst a gradient instrument is useful for optimising a given reaction it does not generally provide as effective a means of running more than one optimised reaction at a defined independent temperature. The SuperCycler Trinity can run reactions with up to a 20°C difference zone to zone.

2.4 Gradient (*available in selected regions only)

Thermal gradient technology enables a varying temperature to be set across the reaction wells of the block. Applications of this feature include the ability to optimize the annealing temperature of an assay in a single experiment by determining the temperature of the wells that yield the best result. The SuperCycler Trinity is capable of generating a gradient of between 0°C and 24°C across the block. The software interpolates and displays the temperature of each column of wells in real-time during a run.

2.5 Thermal Profile Engine

The SuperCycler Trinity has a powerful thermal profile engine implemented within. A profile may contain up to 100 events. Each ‘event’ can be either a hold at temperature, pause or 2 to 5 step cycling with up to 100 repeats. Any event or step can contain triple zone temperatures, gradient, touchdown or long range features. An almost unlimited number of profiles may be stored on the device for re-running. Despite its capabilities profile setup is straightforward.

2.6 Long Range

The Long Range feature enables the time of a particular cycling step to be automatically increased or decreased by a preset amount over a specified range of cycle repeats. The Long Range increasing time mode feature is often used to provide gradually extended times for enzymatic polymerization of longer products during later cycle repeats of an amplification reaction. It is most useful for targets longer than about 1kb. Long Range decreasing time mode can be used to shorten the total run time. During later cycles the majority of enzymatic polymerization is occurring on previously generated amplicons which are shorter in length than the original template. Shorter hold times are often sufficient for polymerization of these shorter length products.

2.7 Touch Down

The Touchdown function enables the temperature of a step to be automatically decreased by a preset amount over a range of successive cycle repeats. Its primary use is as a mechanism to minimise primerdimer artifacts by gradually decreasing the annealing temperature during initial cycle repeats of an amplification profile.

2.8 Pause or Infinite Holds

The Pause function allows the user to pause the profile at any number of pre-programmed points with an audible beep. The current set temperature is held indefinitely until the Continue button is pressed. Holds are useful if there is a need to remove tubes or add reagents at a particular point in a run.

2.9 Auto Restart

The SuperCycler Trinity is able to restart a run if power has been lost for any reason during cycling. Once power is restored the run will be resumed from the last step taken. Care should be taken with the reaction results as the power may have been off for a considerable amount of time.

2.10 Rate Limiting

The SuperCycler Trinity is able to limit the rate of heating and cooling during a run. This is controllable between 0.1°C/sec and 2.5°C/sec. This is useful for chemistry that has only been verified at the lower ramp. This feature is not available in manual mode.

2.11 Manual Control

The SuperCycler Trinity also supports Manual Mode control. This mode enables the user to set the block to a specific temperature quickly without creating a thermal profile. This function is useful for incubating reactions such as DNA digestion or ligation. Manual Mode also supports thermal gradient and triple zone, depending on the unit purchased.

2.12 Evaporation control Heated Lid

The SuperCycler Trinity employs a heated lid design to keep the air contained within the tube hotter than the reaction volume. This causes any evaporation to condense back into the cooler reaction liquid thereby eliminating the need for oil or wax condensation overlay.

2.13 User Interface

The SuperCycler Trinity has a 7” colour touch screen giving a vibrant and flexible means of run setup and monitoring. This internal graphical user interface controller provides a powerful yet intuitive and easy to use interface. All SuperCycler Trinitys have a USB port and (soon to be released) Windows based PC software. This software opens the user up to easier profile setup, sharing of files, and post run examination of any temperature data.

New software features and updates are regularly incorporated and available for either system as free upgrades via web download.

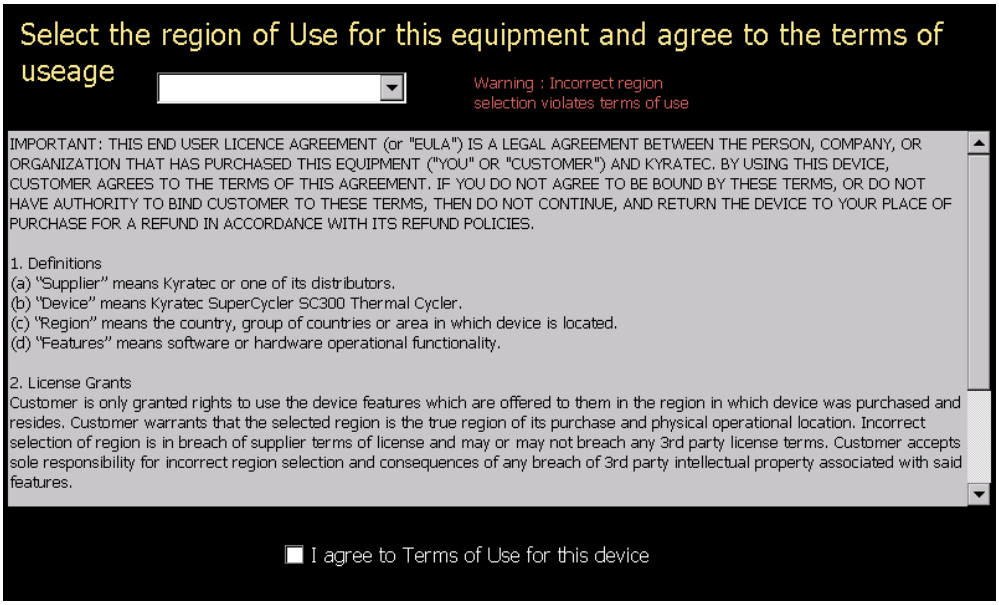
3. Getting Started

Plug the unit into a power outlet and power the unit on with the switch located on the rear of the unit. Do not worry about selecting the correct power voltage for your country, The SuperCycler Trinity is designed to operate in any country in the world with no changes. The unit is also designed to be resistant to power surges and drop-outs that occur in countries with less reliable power grids.

On power up the SuperCycler Trinity will display the logo and take a few moments to initiate the software.

3.1 Region Selection

When the unit is powered on for first time ever the region selection and End User Licence Agreement (EULA) will be displayed. The operator is required to select their correct region of purchase and operation, read the terms of use and check the 'agree' box then press the green tick to continue. Note that available features vary between different regions. The features that are available for your use are always as specified to you before your purchase of the equipment.


Select the region of Use for this equipment and agree to the terms of useage
Warning : Incorrect region selection violates terms of use
IMPORTANT: THIS END USER LICENCE AGREEMENT (or "EULA") IS A LEGAL AGREEMENT BETWEEN THE PERSON, COMPANY, OR ORGANIZATION THAT HAS PURCHASED THIS EQUIPMENT ("YOU" OR "CUSTOMER") AND KYRATEC. BY USING THIS DEVICE, CUSTOMER AGREES TO THE TERMS OF THIS AGREEMENT. IF YOU DO NOT AGREE TO BE BOUND BY THESE TERMS, OR DO NOT HAVE AUTHORITY TO BIND CUSTOMER TO THESE TERMS, THEN DO NOT CONTINUE, AND RETURN THE DEVICE TO YOUR PLACE OF PURCHASE FOR A REFUND IN ACCORDANCE WITH ITS REFUND POLICIES.
1. Definitions
(a) "Supplier" means Kyratec or one of its distributors.
(b) "Device" means Kyratec SuperCycler SC300 Thermal Cycler.
(c) "Region" means the country, group of countries or area in which device is located.
(d) "Features" means software or hardware operational functionality.
2. License Grants
Customer is only granted rights to use the device features which are offered to them in the region in which device was purchased and resides. Customer warrants that the selected region is the true region of its purchase and physical operational location. Incorrect selection of region is in breach of supplier terms of license and may or may not breach any 3rd party license terms. Customer accepts sole responsibility for incorrect region selection and consequences of any breach of 3rd party intellectual property associated with said features.
I agree to Terms of Use for this device

If the instrument is moved to a different region of operation at a later date then the region configuration screen may be reached through the *'settings'* icon under the configuration menu.

A copy of the Terms of use may also be found at the end of this manual.

3.2 Navigating the Software

After power up the unit defaults to the main screen from where all features may be accessed.

The 4 screen icons provide access the following features:

CONFIGURATION – Takes you to the configuration page allowing of machine options.

PCR RUN – Is used to load or create a new PCR thermal profile and initiate its execution.

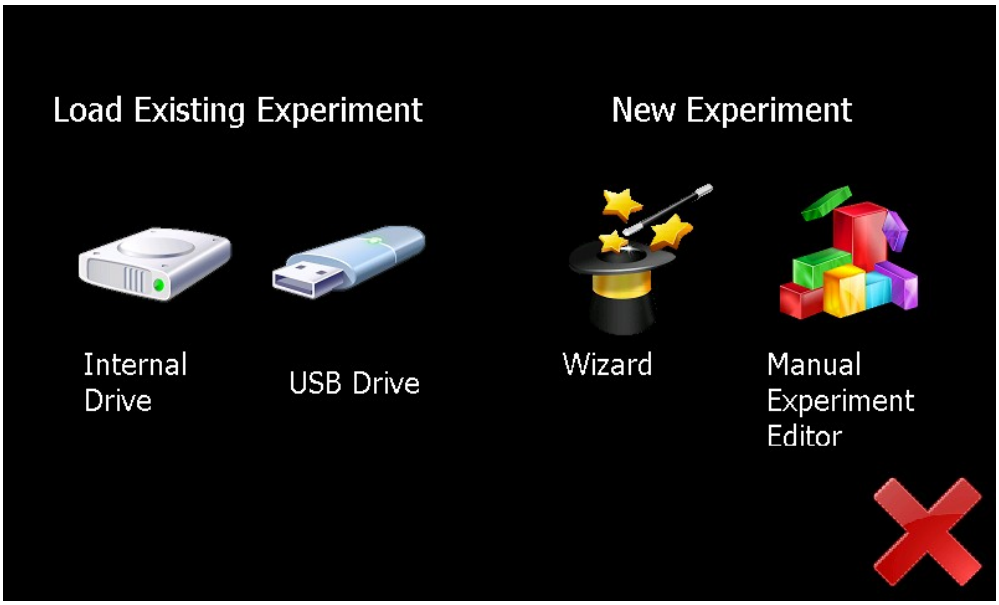
MANUAL CONTROL – Allows immediate manual setting of block temperature.

INFORMATION – Displays a general information screen which includes such information as serial number, software and hardware version numbers. An on-screen user manual is accessible from under this page menu

Throughout the software help is available in numerous locations by pressing the question mark logo if available.

4. PCR Profile Creation

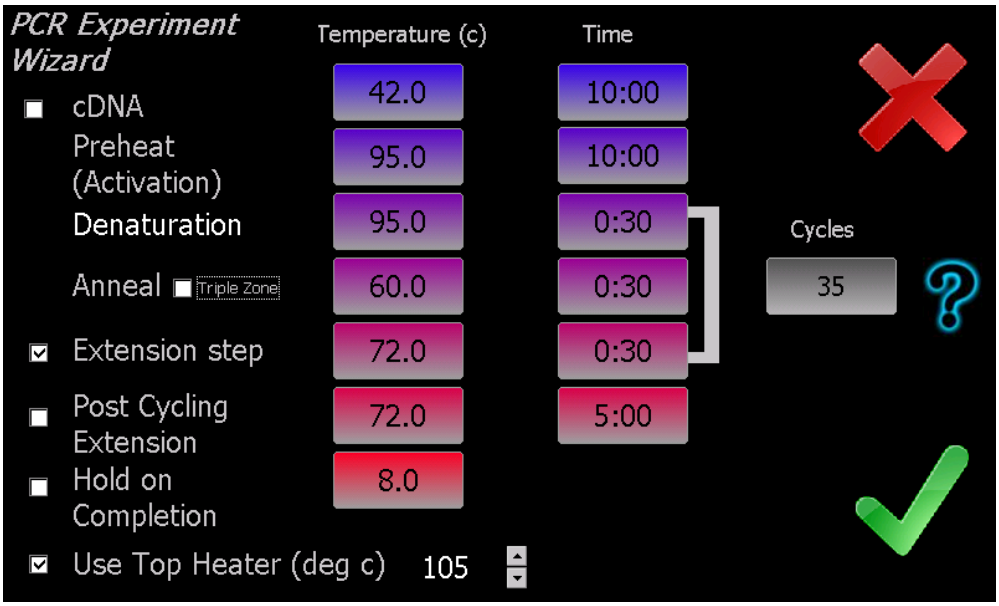
From the 'home' screen the 'PCR Run' icon will bring you to the experiment page. Here you will have 4 options, and you can load an existing experiment from either the internal drive or an external USB drive, or create a new thermal profile using either the Wizard or the Manual Experiment Editor.



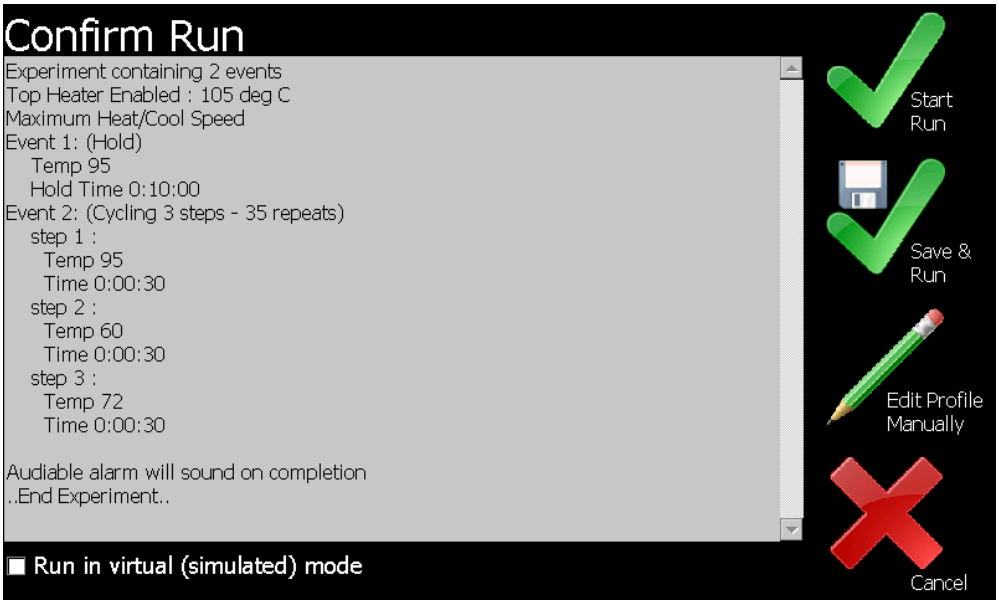
When loading files from the 'Internal Drive' you only have access to the files under the directory of the user that you are currently logged in as. If you are not logged in as a registered user your file access will be under the 'Default' user directory.

4.1 Wizard Mode

The SuperCycler Trinity software includes a Wizard utility which enables the user to configure easy to moderate complexity profiles in just moments. To activate select 'Wizard' from the PCR start-up screen.



The Wizard screen displays each of the steps which occur in a typical range of profiles. At a minimum there are 3 steps, Preheat and then denaturation and anneal which are cycled. You may enable up to a further 3 steps (cDNA, Extension & post run hold) by clicking on the corresponding check boxes. Each of the steps will be executed in the order they are shown arranged down the screen with the Denaturation, Anneal and Extension (if enabled) steps being cycled. After the amplification run has been completed the temperature may be held at a defined temperature until the user disables the unit. To adjust any of the parameters click on the corresponding time or temperature boxes and a keypad will be presented allowing entering of new numbers. The number of cycles can also be adjusted between 1 (single execution, no loops) and 99 cycles.



When the user is happy with the profile parameters just click on the tick. A run review screen will now be shown with a text description of the profile steps. Click on OK to commence run execution or 'Edit Profile' if you require to further modify the wizard created profile. The 'Save & Run' Icon allows you to save the profile then run it.

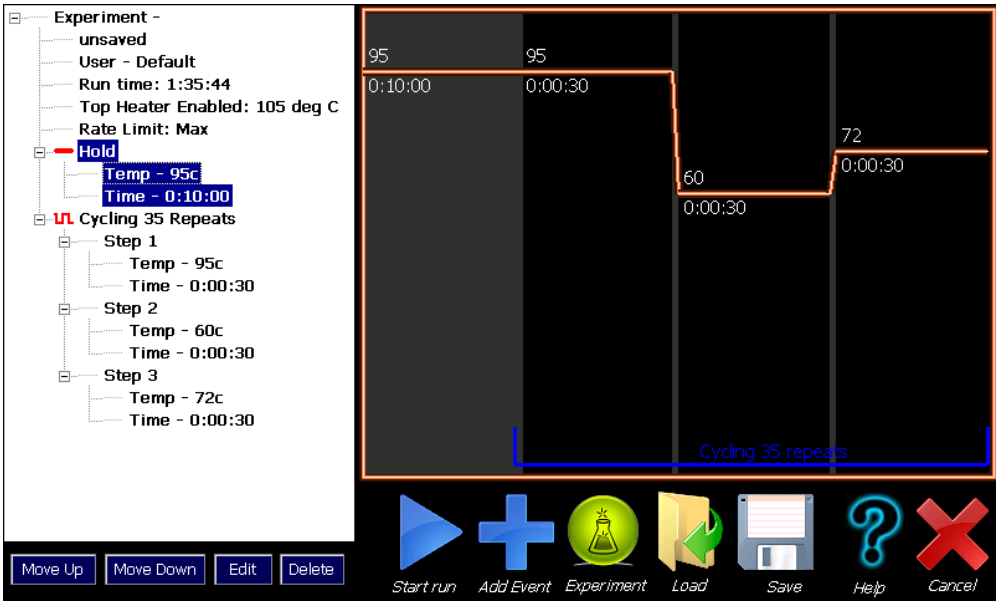
Once the profile is confirmed, if the *'Use Top Heater'* checkbox option is selected (default) then you will be prompted with a screen asking if you wish to wait for the top heater to reach target temperature before commencing the run. If you select to wait for the top heater to achieve temperature a waiting screen will be displayed. You may skip the waiting step at any time if you wish to commence the run immediately. Depending on the set temperature of the Top Heater it will take up to several minutes to pre heat to this temperature.

When the run commences the software will automatically proceed to the 'Run' screen. You are not able to modify the profile once a run has commenced but you may save or edit it after it completes or is terminated.

From the run review screen you may also check the option 'run in virtual mode'. This will make the SC simulate the run rather than performing the actual thermal steps on the block. This can be useful if you wish to check complicated runs prior to performing them.

5. Manual Profile Generation and Execution

The manual profile editor is evoked from the PCR Experiment screen. This screen displays the current experiment profile in a 'tree list' format. The run will be displayed graphically on the right side of the screen, showing a maximum of five steps at a time. Arrows on the graph allow navigation of the steps. The event parameters can be edited numerous ways. To edit the temperature or time of an event touch the corresponding temperature or time on the graph to edit them. If the event has a touchdown or long range step then the entire event will be reviewed by pressing the text. Selecting the event on the Tree list allowed the entire event to be edited, deleted or moved up or down in order.



The profile generation screen contains 7 icon buttons with the following functionality:

HELP – This button will display the on screen user manual with the relevant pages selected

START RUN – This button is used to activate a run. Pressing this button will show a profile review before commencing a run

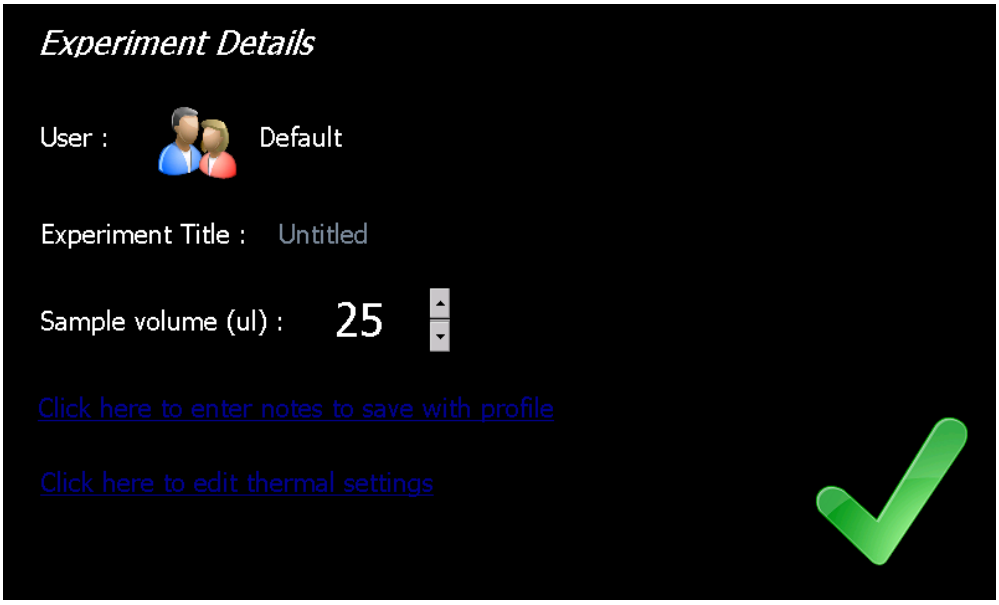
ADD EVENT – Evokes the Add Step wizard to build a new profile step after the last current step.

SAVE – Allows a given profile to be saved to internal flash memory disk. The unit has very large internal memory allowing virtually unlimited profiles to be saved (in the order of tens of thousands). Saving a profile also stores the device options configurable under the settings menu, i.e. top heater temperature and other functionality. You may enter any valid file name for saving. Profile file will be saved to the current user directory or the Default directory if no user is selected.

LOAD – Loads a pre-saved profile from the internal flash memory. The SuperCycler Trinity displays a list of the saved files on the unit in the directory of the currently selected user. If no user is selected it will show the files saved in the default user directory. To access a different user's files you need to log in as that user.

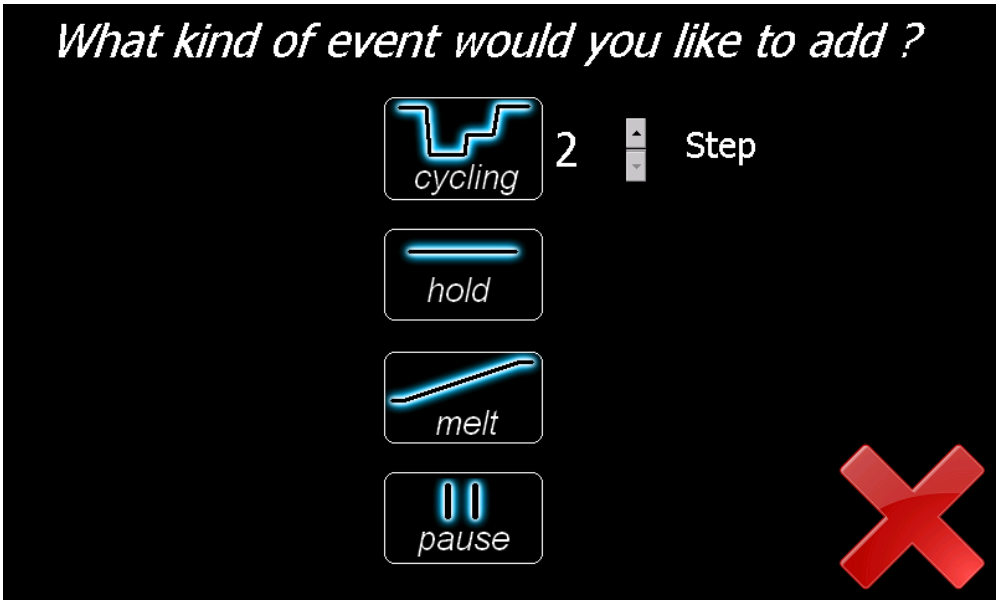
Cancel – Returns the user to the experiment page.

Experiment – Allows the operator to edit the experiment details. By selecting the user picture brings up the user log in screen. By selecting the title of the experiment brings up the keyboard and allows the title to be edited. The sample volume can be edited by using the up/down arrows. Notes can be added to the experiment by pressing the link. The thermal details can be edited by pressing the link. See 7.3 Machine Settings for details.



5.1 Creating a new Event

To create a new event select the 'Add Event' icon in the manual profile editor. The first screen of the Add Event Wizard which will be displayed lets the user select the type of event.



You may choose from 4 event types.

HOLD – Is a simple hold at given temperature for a set time. It may be performed either with or without a gradient across the block.

The hold screen allows the operator to set the hold time and temperature. Depending on the machine model the option for Triple Zone or Gradient may be available. If the Triple Zone option is selected then all 3 temperature

zones will become available to set independently. If the Gradient* option is selected both the left and right temperatures may be set separately and the predicted well temperatures can be shown by clicking the Predicted Temps link.

RAMP – Allows the block temperature to be ramped either up or down between two set temperatures over a preset length of time. The block target temperature is updated every second and with a 0.025 degree minimum step resolution. It may be performed either with or without a gradient across the block.

The ramp screen shows the initial and final ramp temperatures. Depending on the machine model the option for Triple Zone or Gradient may be available. If the Triple Zone option is selected then all 3 temperature zones will become available to set independently. If the Gradient* option is selected both the left and right temperatures may be set separately and the predicted well temperatures can be shown by clicking the Predicted Temps link.

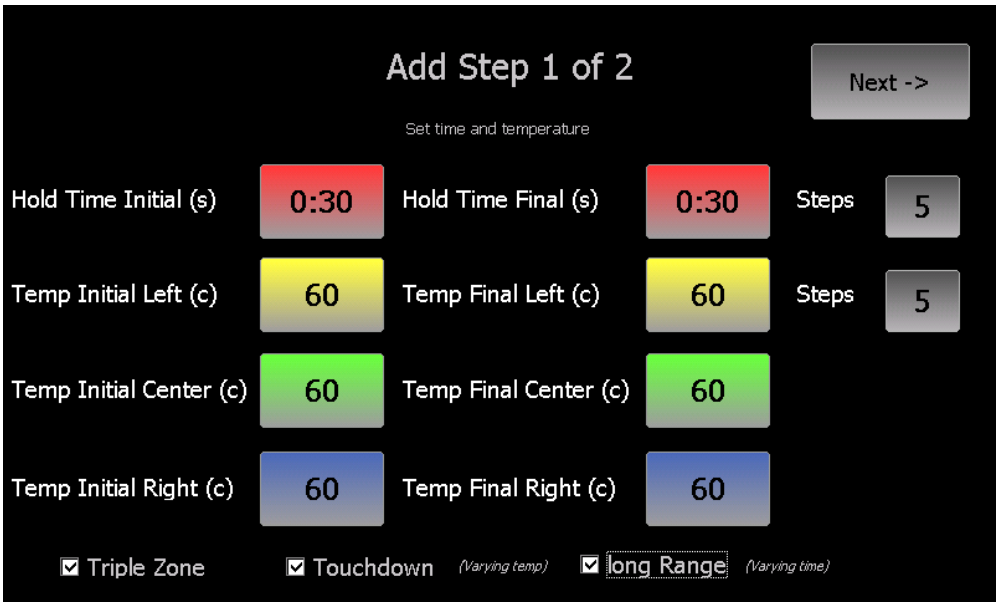
PAUSE – will hold the temperature at the last set point and pause the run with an audible warning. This is useful if the operator needs to perform a certain action of the samples at a given point in the run. The operator clicks ok when complete and the run will continue with the next event.

CYCLING x STEP – will proceed to generate a multi step cycling event. The scroll button to the right allows you to change the number of steps between 2 and 5 for the cycling event.

Within the cycling configuration screens there are numerous options. Depending on the machine model the option for Triple Zone or Gradient may be available. If the Triple Zone option is selected then all 3 temperature zones will become available to set independently. If the Gradient* option is selected both the left and right temperatures may be set separately and the predicted well temperatures can be shown by clicking the Predicted Temps link. There are also options for Touchdown and Long range features. Selecting these checkboxes will display extra buttons to configure these features.

Touch Down – allows for the temperature of a given step within a cycling event to be progressively increased or decreased from an initial value to a final value over a defined number of steps.

Long Range – allows the hold time of a given step within a cycling event to be progressively increased or decreased from an initial value to a final value over a defined number of steps.
Any or all of the steps within a cycling event may use these features. The following picture displays the same screen with all options *(Triple Zone*, Touch Down & Long Range)* enabled.



The *'Next'* button will proceed through each of the parameter screens for each step contained within the cycling. After the parameters for each step are configured the operator is prompted to enter the number of times to

repeat the cycle.

***Note - Gradient function and Triple Zone not available in all regions or in all models.**

5.2 Starting a run

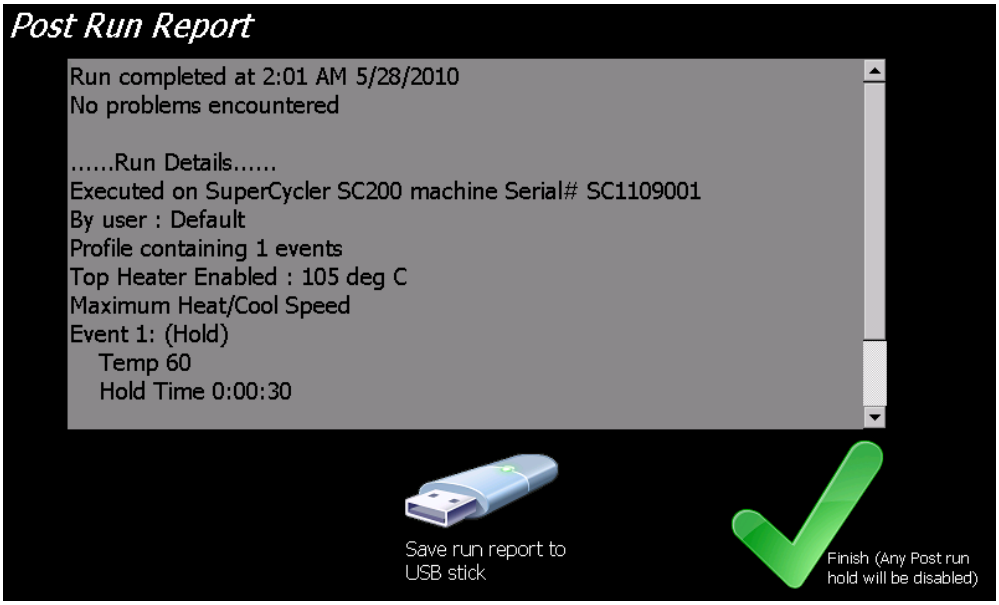
Activating the **Start Run** button will show a profile review page which allows the operator to check over the profile (displayed in text format) before confirming commencement. The profile review will also contain general run options regarding the Top Heater evaporation control and actions on run completion. These are configurable under the configuration menu. You have the option to perform the run in virtual mode; this will simulate the run without actually thermally varying the block.

Once the profile is confirmed, If the *'Use Top Heater'* checkbox option is selected (default) under the setup menu then you will be prompted with a screen asking if you wish to wait for the top heater to reach target temperature before commencing the run.

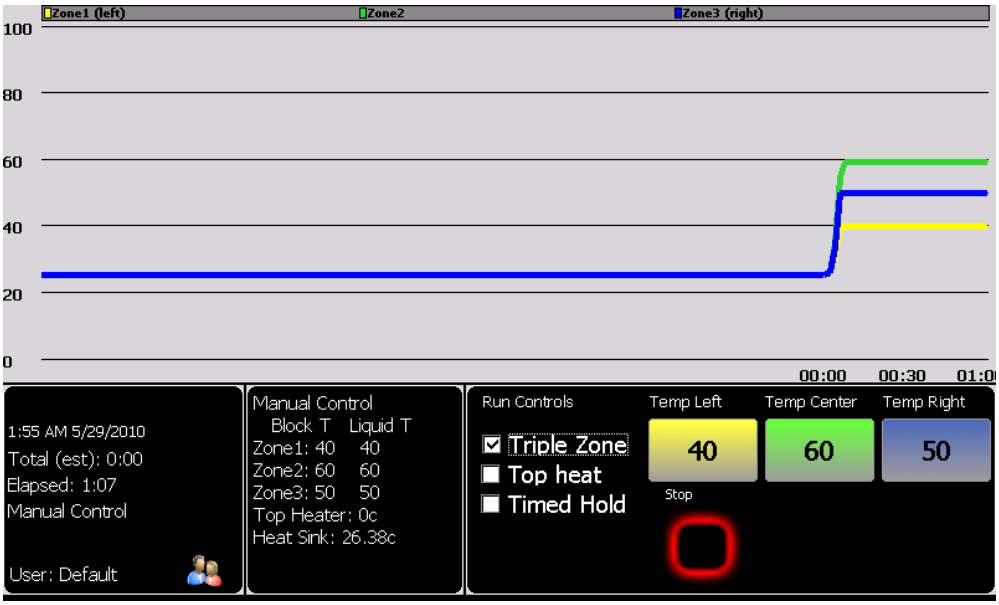
If you select to wait for the top heater to achieve temperature a waiting screen will be displayed. You may skip the waiting step at any time if you wish to commence the run immediately. Depending on the set temperature of the Top Heater it will take up to several minutes to pre heat to this temperature.

Once the run commences the software will automatically proceed to the 'Run' screen. You are not able to modify the profile once a run has commenced.

On run completion the post run report screen will show and if enabled an audible alarm will sound. The alarm may be muted by pressing the mute alarm button. The post run report can be saved as a text file to a USB memory stick for inclusion into lab books etc. Note that post run reports are not saved to internal memory.


Post Run Report
Run completed at 2:01 AM 5/28/2010
No problems encountered
.....Run Details.....
Executed on SuperCycler SC200 machine Serial# SC1109001
By user : Default
Profile containing 1 events
Top Heater Enabled : 105 deg C
Maximum Heat/Cool Speed
Event 1: (Hold)
Temp 60
Hold Time 0:00:30
Save run report to USB stick
Finish (Any Post run hold will be disabled)

6. Manual Block Control



The manual mode screen allows immediate manual setting of the block temperature. To activate this mode simply press the blue 'start' button. Terminating the mode is achieved by pressing the red 'stop' button. To Program the set temperature press the temperature button to the left of the graph and enter the desired value. You may program the temperature set point to 0.1 degree C resolution. Depending on the machine model the option for Triple Zone or Gradient may be available. If the 'Triple Zone' option is selected then all 3 temperature zones will become visible. These temperatures refer to the left, center and right zones when looking at the machine. They are set independently of each other. If the 'Gradient'* checkbox is checked the 'Temp Right' button appears and you are able to set different temperatures for both the left and right sides of the block with a roughly linear thermal gradient presented between the two outer well sides. To enable the Top Heater evaporation control click the 'Top Heat' checkbox. The target temperature of the top heater is configured under the Configuration → Settings menu. Note the top heater will take a few minutes to reach its operating temperature. The left side of the screen displays the temperatures of each of the 4 zones. Other information also displayed is the event, step and cycle numbers for when a profile is being executed. At the bottom of this display box is the top heater (TH) and internal heat sink (HS) temperatures.

***Note gradient feature not available all regions**

7. Configuration Tools

The configuration page provides access to the following features.

FILE MANAGER – For managing the PCR run files on the device and copying from the device using a USB memory stick.

MACHINE SETTINGS – Allows changes to be made to the instruments settings.

TIME & DATE – Used to set the Time for the instruments internal clock.

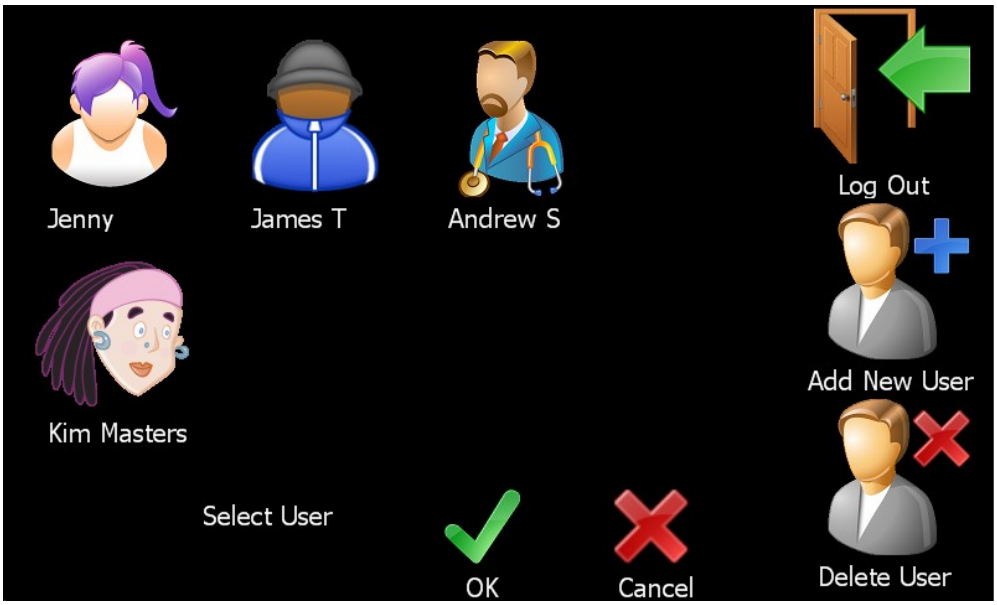
THERMAL CALIBRATION – The thermal calibration feature is used to adjust the machine calibration. SuperCycler Trinitys are factory calibrated and should not require user recalibration for the life of the machine. The recalibration procedure is not covered in this user manual. If it is required, contact the distributor the equipment was purchased through for 'SC Service note – Thermal recalibration'. The thermal calibration is password protected to prevent it accidentally being changed.

USER ACCOUNTS – User account control.

SOFTWARE UPDATE – Allows upgrading of the SuperCycler Trinity operating Software.

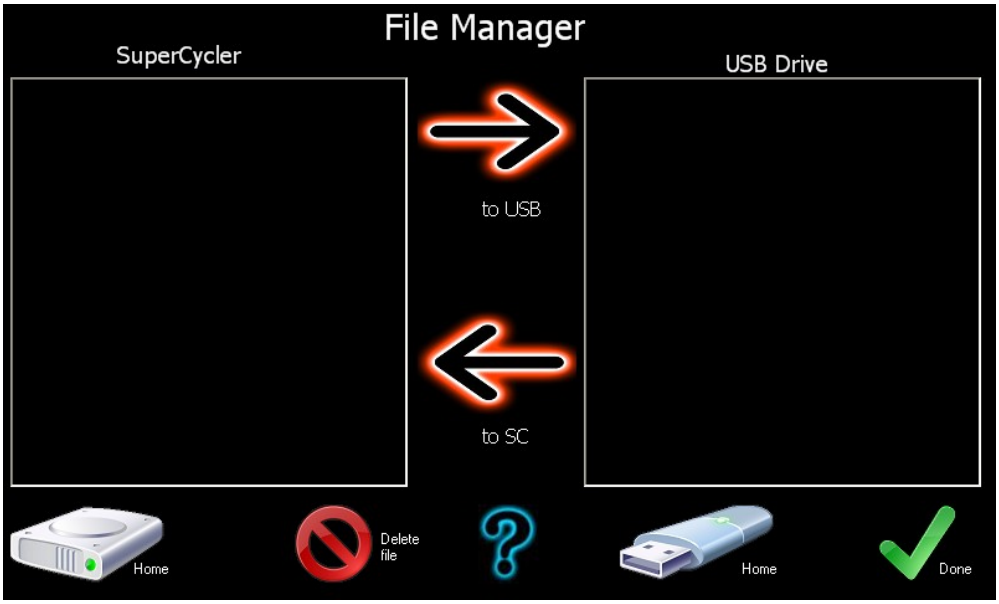
TOUCH PANEL CALIBRATION – You can also perform a calibration of the touch-screen interface using the calibration wizard. If the calibration has varied click on this button and follow the instructions to re-calibrate the screen. If you are having difficulties navigating to this option because the touch screen is out of calibration then you may use a USB mouse plugged into the front USB port to reach the touch screen calibration wizard.

7.1 User Accounts



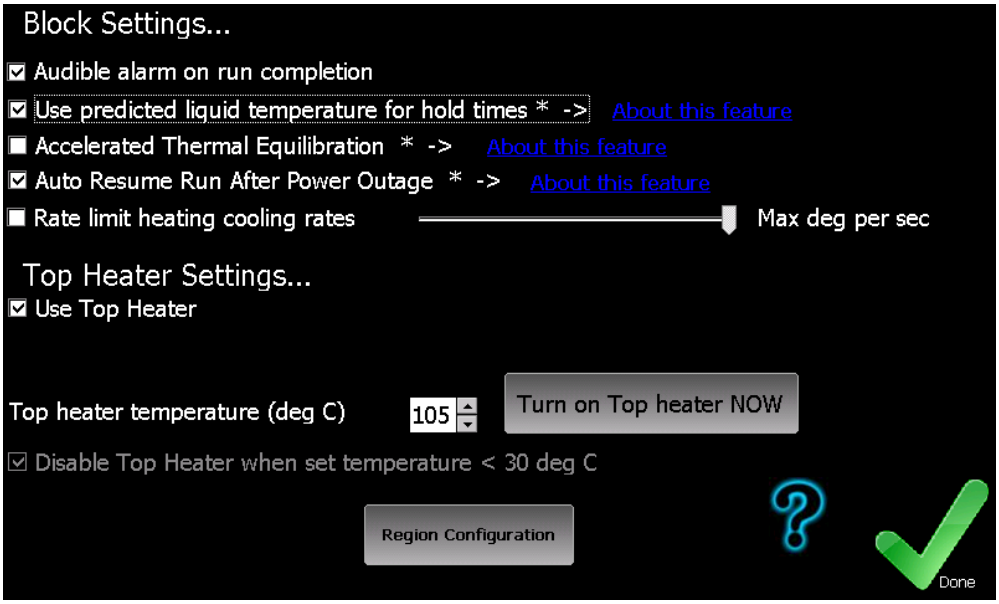
In the users area you are able to select an existing user or create or delete a user profile. When a user is selected thermal profiles will be loaded or saved to a directory specific to that user. Logging out will change back to default user. To create a new user select the 'Add New User' icon and then enter the user name and choose a user profile image.

7.2 File Manager



The file manager area enables you to transfer PCR run files between the default or individual user directories and a USB memory drive. Plug your USB drive into the connector on the front of the unit and you may browse the directories on the SuperCycler Trinity and transfer files to or from. You may also delete any thermal profiles from the SC. Press on the 'Home' icons to refresh the directory list back to the root directories. Select files in either the SC or the USB stick and press the transfer logos to copy the files across. Files may be moved between different user directories by first copying them to a USB stick and then back into the destination user directory.

7.3 Machine Settings


Block Settings...
Audible alarm on run completion
Use predicted liquid temperature for hold times * ->
About this feature
Accelerated Thermal Equilibration * ->
About this feature
Auto Resume Run After Power Outage * ->
About this feature
Rate limit heating cooling rates
Max deg per sec
Top Heater Settings...
Use Top Heater
Top heater temperature (deg C)
105
Turn on Top heater NOW
Disable Top Heater when set temperature < 30 deg C
Region Configuration
Done

The following features are available under this page.

96 well thermal block settings:

- *'Audible alarm on run completion'* toggles whether there is an audible alarm or just a screen message to alert the operator that the run has completed.
- *'Use* Predicted *Temperature for Hold times'* The SC software implements a thermal model which predicts the actual liquid temperature inside the reaction vessels. Hold times can be based on this model (default) or based purely on the block temperature. Using the predicted temperature effectively increases the hold times (and total run time) slightly but gives a more accurate representation of the hold time of the actual sample liquid. Most manufacturers' thermal cyclers purely use the block temperatures for timing.
- *'Accelerated Thermal Equilibration'* If this feature is selected the temperature model will use overshoot and undershoot to get the liquid to temperature faster. This is useful for highly sensitive chemistries or thermal profiles with short hold times.
- *'Auto Resume Run After Power Outage'* If this feature is available on your cycler (not available on all models) then when this box is checked a run will automatically resume at the same place if power should be momentarily lost during a run.
- '*Rate limit heating cooling rates*' sets the rate limit for a run. This has a limit of 0.1°C/sec to 2.5°C/sec. This feature is only available in runs not manual mode.

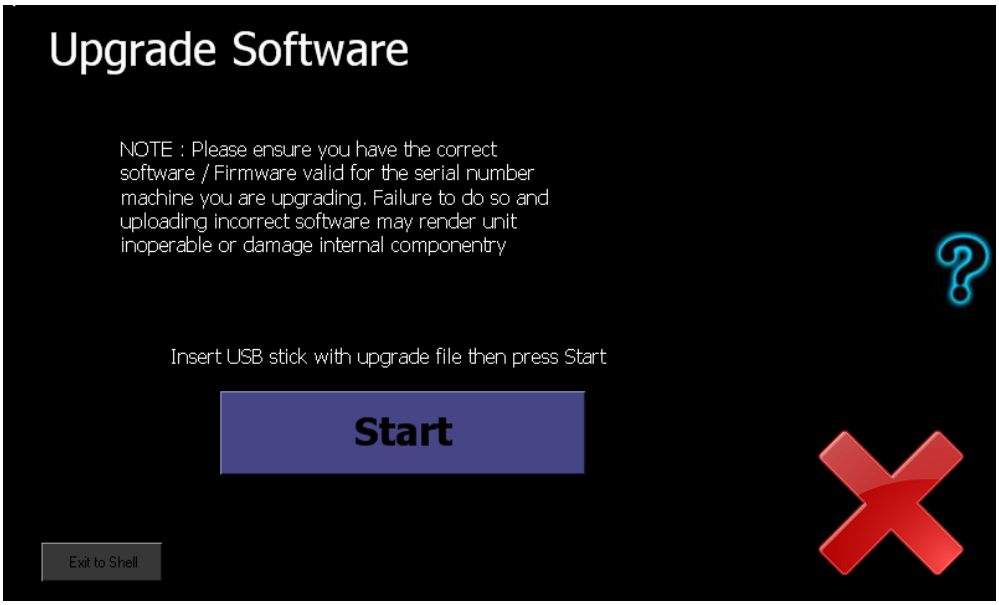
Top heater evaporation control settings:

- *'Use Top Heater'* will cause the top heater to be used during a run if it is checked.
- Entry box for top heater temperature. Temperature is programmable between 30 – 110° C (default 105 °)
- Button for manually enabling the top heater to preheat it if required.
- *'Disable top heater when set temperature < 30deg'* feature is implemented to reduce the high thermal load placed on the peltiers when holding the samples at low temperatures (i.e. 4 degrees). This prevents excess heat from the top heater heating the chilled samples. It is best to leave this option enabled.

Note that the top heater is only activated when a run is started or the operator enables it in manual mode.

- The *'Region Configuration'* button enables the Operational region to be changed should the instrument be moved to a different country. Note that available features vary between different regions. See Section 2.1 for more information.

7.4 Software Update


Upgrade Software
NOTE : Please ensure you have the correct software / Firmware valid for the serial number machine you are upgrading. Failure to do so and uploading incorrect software may render unit inoperable or damage internal componentry
Insert USB stick with upgrade file then press Start
Start
Exit to Shell

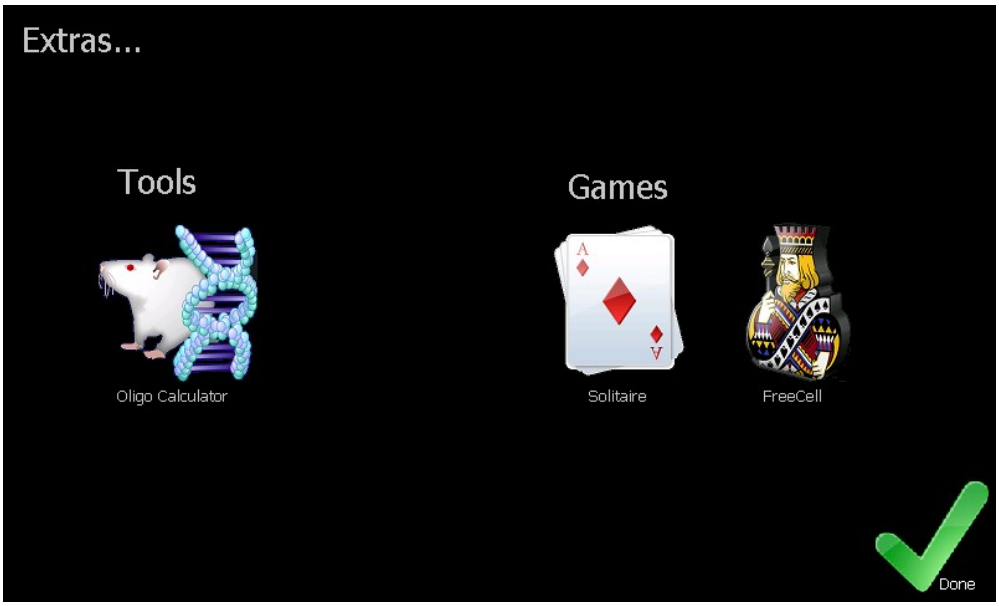
A facility has been provided to update the software which resides on the SuperCycler Trinity. The upgrade file you receive from our support team or the website should be placed on the main root directory of your USB memory stick. You may then select it to upgrade the unit's software. After selecting the software file read the message box and press OK and wait. Upgrade will take up to 1 – 2 minutes. Once upgrade is complete you can check that the new version is installed by visiting the *'Information'* page from the home screen and check the installed software version.

IMPORTANT NOTE: Do not interrupt the unit while a file upgrade is in progress. Switching off the power during upgrade may render the unit inoperable.

After upgrading software the internal on screen user manual may need to also be updated. Click on one of the help icons, it will display an upgrade message if a user manual update is also required. To update it you need to download the correct user manual zip file from our website and unzip it on to the root (main) directory on a USB memory stick and then insert it into the SuperCycler Trinity and follow the upgrade prompts when you try to access the out of date help system.

7.5 Games & Extras

Under the extras tab you will find some other programs. The **Oligo Calculator** is useful for calculating the theoretical melt temperature and other information pertaining to the oligo design. Simply enter the sequence and it does the rest. Several popular **Games** are also provided for your enjoyment!


Extras...
Tools
Games
Oligo Calculator
Solitaire
FreeCell
Done

8. User Tips

It is recommended before you use the device for the first time with biological samples that you experiment with setting up runs and trialling these to familiarise yourself with the machine to ensure correct operation on your valuable samples.

To achieve the maximum lifespan and best clarity from you SuperCycler Trinity touch-screen please only use the stylus provided (or equivalent) or your fingers for selecting on the touch-screen. Using a ball point pen, pencil or anything sharp will cause the screen to scratch.

To maximise the lifespan from the peltier devices which effect the heating and cooling there are a number of actions the user may take:

Do not run the unit with no tubes in the plate and the lid closed. When the lid is closed and no tubes are present the top heater rests close to the 96 well block and will place high thermal load on the peltier devices. Extended operation in this situation will shorten the lifespan of the peltier devices.

Attempt to minimise the time holding the samples at below ambient temperatures longer than required. It is recommended against using the device as a refrigerator to hold samples at 4 degrees C temperature for long periods of time if you wish to maximise the lifespan of your instrument.

The heated lid applies substantial pressure to the tubes to ensure they are well seated into the thermal block and prevent the caps or sealing film from popping off with the increased vapour pressure inside the tube. When using only a single or small number of individual tubes then it is advised you place an empty tube in each of the 4 corners of the block to help absorb the pressure. This will help prevent budget, or thin wall plastic ware from deforming under the high temperature and pressures.

The Top Heater evaporation control default is 105deg C. This is suitable for most applications. If you find that you are getting excess condensation forming at the top of your tubes you can try increasing this temperature to 110deg C or higher.

9. Specifications

Thermal Cycling Technology	High performance active heating and cooling using quality elements x 8 & precision sensors x 4
Temperature Range	4°C–99°C
Temperature Accuracy	±0.5°C over full range, typically < ±0.1°C at 60°C
Temperature Uniformity	±0.3°C, 30 seconds after target (range 40°C - 90°C) Typically < ±0.1°C at 60°C
Temperature Resolution	0.1°C increments
Heating/Cooling Rate	7°C/sec Peak (block). 5°C/sec typical heat & cool between denat & anneal (block)
Well Configuration	96-Well block supporting: 0.2 mL tubes or strip tubes with flat or domed caps; 96-well high- or low skirt plates with strip caps, adhesive cover, or oil overlay
Linear thermal gradient (Available selected regions only)	Programmable 0 – 24°C across block width (12 wells)
Condensation control	Automatic utilising applied pressure heated lid
Heated Lid Temperature Range	Controllable 60°C–115°C
Dimensions	W 180 mm (7”) D 285 mm (11.2”); 350 mm (13.8”) including cables H 190 (7.5”) mm lid closed: 340 mm (13.4”) lid open
Weight	5.5kg (12.1 lbs)
Colour	Pewter on black
Electrical	100–240 VAC @ 4 Amp (50/60 Hz) Automatic voltage sense Standard IEC Inlet plug
External Interface	USB interface to Windows XP / Vista based PC USB host port for memory stick, mouse, keyboard etc.
Internal Interface	Embedded graphical controller with 7” widescreen touch sensitive colour backlit display
Software	Supplied with unlimited user license. Free upgrades available via web download.
Internal Memory	256MB, enough for 10,000+ saved profiles
Functionality	Multiple thermal zones, Touch Down/Up, Long Range, Thermal Gradient*, Program Pauses, Temperature Graphing, On-screen Help, User Accounts, Profile Load and Saving, Manual Mode, USB File Transfer, Post Run Reporting, Auto restart and more.
Included Accessories	Power Cable, User manual, Touch Screen Stylus
Warranty	Check with your local distributor

10. Terms of Use

END USER LICENCE AGREEMENT
Kyratec SuperCycler SC300

IMPORTANT: THIS END USER LICENCE AGREEMENT (or "EULA") IS A LEGAL AGREEMENT BETWEEN THE PERSON, COMPANY, OR ORGANIZATION THAT HAS PURCHASED THIS EQUIPMENT ("YOU" OR "CUSTOMER") AND KYRATEC. BY USING THIS DEVICE, CUSTOMER AGREES TO THE TERMS OF THIS AGREEMENT. IF YOU DO NOT AGREE TO BE BOUND BY THESE TERMS, OR DO NOT HAVE AUTHORITY TO BIND CUSTOMER TO THESE TERMS, THEN DO NOT CONTINUE, AND RETURN THE DEVICE TO YOUR PLACE OF PURCHASE FOR A REFUND IN ACCORDANCE WITH ITS REFUND POLICIES.

1. Definitions:
   (a) “Supplier” means Kyratec or one of its distributors.
   (b) “Device” means Kyratec SuperCycler SC300 Thermal Cycler.
   (c) “Region” means the country, group of countries or area in which device is located.
   (d) “Features” means software or hardware operational functionality.

2. License Grants
Customer is only granted rights to use the device features which are offered to them in the region in which device was purchased and resides. Customer warrants that the selected region is the true region of its purchase and physical operational location. Incorrect selection of region is in breach of supplier terms of license and may or may not breach any 3rd party license terms. Customer accepts sole responsibility for incorrect region selection and consequences of any breach of 3rd party intellectual property associated with said features.

3. Limitation of Liability
Use of device and any results or information generated by device are at the sole risk of customer. Supplier makes no guarantees that expected functions are performed correctly. Supplier strongly recommends that customer perform full manner of internal controls within their reaction volumes to satisfy themselves that expected functions were performed correctly. Supplier’s sole responsibility is for repair or replacement of defective device within the warranty period. Maximum liability of supplier in any circumstance is limited to the amount paid by customer to the supplier for the device.